A participatory approach to the evaluation of participatory museum research projects

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ABSTRACT

In this paper we will describe, justify and critique a participatory approach that we have developed in order to evaluate the success of a participatory research project that was exploring ways of making museum learning experiences more inclusive for adults who have a diverse range of access preferences. Because we were researching in a unique space at the intersection of inclusive museum education, inclusive technologies and participatory research we have needed to develop an original evaluation approach; informed by methods and frameworks derived from other fields. We present examples of the kind of evaluation information that the framework elicited and use this as a basis to critique the strengths and weaknesses of the framework. Our experience of using creative methods for eliciting evaluation data suggest that useful information about participation can be revealed but that further improvements can be made in order to make the research experience more participatory.

Keywords: inclusive museums; technology; participatory research, disability, impairment

INTRODUCTION

The primary aim of this paper is to describe, justify and critique a participatory approach that we have developed in order to evaluate the success of a participatory research project funded by Horizon 2020 called ARCHES (Accessible Resources for Cultural Heritage EcoSystems). ARCHES involves museum education and technology partners across Europe. The overarching aim of ARCHES is to create more inclusive museum environments [1] for adults who have a range of access preferences frequently associated with the labels of sensory impairments and intellectual impairments [2]. One way in which the ARCHES project is attempting to achieve this aim is by developing online resources, software applications and multisensory technologies to enable people with intellectual impairments and sensory impairment to access museum learning opportunities. We are using participatory approaches to work collaboratively with over 100 participants with intellectual impairments and sensory impairments from England (London), Spain (Madrid and Oviedo) and Austria (Vienna) along with 6 museums and 5 technology companies. Participants are taking a role in identifying existing useful technologies and resources that can promote inclusion; evaluating their experiences of activities and resources within museums; suggesting ways in which technologies might enhance their experiences or resources; evaluating test or beta-versions of technologies and analysing the processes and outcomes of the project as a whole. In seeking to understand what includes and excludes adult learners from museums and how technology might mediate this, ARCHES has employed participatory research methods.

Drawing on the arguments of Aldridge (2016) the ARCHES project positions its approach to participatory research as being designed with the needs of participants in mind, involving ongoing dialogue and consultation, in relationships based on mutuality, understanding and trust and seeking to enhance the participant voice in all aspects of the project. We feel unable respond to the call by [redacted]) to unify under the label Inclusive Research, since we were also working with participants other than those labelled with intellectual impairment. However, we

do identify with the core principles of inclusive research proposed by Walmsley and Johnson (2003) and would suggest that two in particular are pertinent to research focusing on inclusive museums: "research must address issues which really matter to people with learning difficulties, and which ultimately lead to improved lives for them" (i.e. improved access to museum education) and "it must access and represent their views and experience".

ARCHES occupies a unique space in the field- operating at the intersection between inclusive museums, inclusive technologies and participatory research. Given this unique position, it has been important for us to evaluate the success of the project in order to derive advice and guidance for similar projects in the future. The evaluation approach that we have developed in order to rigorously and meaningfully judge the success of the ARCHES project consists of two key components: 1) Participatory methods (processes and activities) for eliciting evaluation data and 2) Participatory methods for analysing the evaluation evidence. With regards to methods for eliciting evaluation data we distinguish between evaluation 'in the while' and verification 'of the while'. In this paper we will describe and justify this evaluation approach; present examples of the kind of evaluation information that the framework elicited and use this as a basis to critique the strengths and weaknesses of the framework and implications for future similar projects. Before we do this, we will provide the context for this work by providing an overview of approaches to inclusion and participation in museums.

BACKGROUND: APPROACHES TO INCLUSION AND PARTICIPATION IN MUSEUMS

Within the museum sector as a whole there has been a concerted effort towards enhancing the engagement and participation of minority 'publics' in the museum experience. Two particular approaches are the co-production of exhibitions and the removing of obstacles to access. Co-production of exhibitions has tended to focus on including young people, diaspora and black and ethnic minorities. For example, Lynch and Alberti (2010) describe and critique the 'Myths about Race' project where Manchester Museum aimed to co-produce a 'multi-vocal' exhibition focusing on the Museums own history with regards to racism. Morse, McPherson and Robinson (2013) outline the 'Stories of the World' project which worked with young people to revisit world cultures collections at Tyne & Wear Archives and Museums. Lynch (2014) describes the 'Collective Conversations' Programme, also at Manchester Museum, which invited local communities to negotiate their interpretation of the museums' collections.

It is widely agreed that museums are complex learning environments, and that providing access to the concepts that collections, displays and exhibits convey, is not always an easy thing to do. Hooper-Greenhill (1994: 136) for example argued that: "Museums can be difficult places to visit even if active, able-bodied and fit. They are often exhausting, and both physically and mentally demanding". The "Inspiring Learning for All" framework published by the Museums, Libraries and Archives Council (MLA, 2004) exemplifies how removing obstacles to access has been addressed. It focuses on four processes that museums should consider: planning to identify and remove obstacles that inhibit people from learning; ensuring that people have access to knowledge, resources and collections at time and in ways that suit them; making the physical and virtual learning environment welcoming and accessible and presenting knowledge, resources and collections to reflect different access preferences and enable learning and discussion. Museums have developed a range of different strategies and methods for removing barriers to learning Taped guides, touch tours, handling sessions, tactile plans and drawings, large-print and Braille information, clear labels and

signs, sign-language interpreted tours, lip speaking and reading are considered to be examples of standards of good museum practice (McGinnis, 1999). Some, less standard but perhaps more engaging approaches have also been developed. For example Hoyt (2013) describes a dialogical approach to verbal description of art with visitors who are blind or have low vision, where verbal description promotes a sense of discovery through responsive observations, questions and discussion, in other words "Verbal description is not passively conveyed to visitors; visitors actively produce it." in what is defined as an inclusive, participatory approach.

Approaches to inclusion and participation for museum visitors who are blind or visually impaired

A common conclusion to the problem of access for blind or visually impaired museum visitors is to argue that if they cannot see the museum objects, they should be facilitated to touch them. For example, Mesquita and Joâo Carneiro (2016) analysed the accessibility of 28 museums in four European cities with regards to accessibility to visitors with visual impairments. In particular they looked at the accessibility of objects and their interpretation. Accessibility was assessed using a check-list derived from a literature review. Assessment methods involved observation and interviews. They concluded that museums did not offer many opportunities to maximise the museum experience obtained through the full senses. In a series of articles Hetherington (2000, 2002, 2003) discusses the inherent tensions that museums face in attempting to make their objects more accessible, but not actually wanting museum visitors to touch them. Hetherington (2000: p 451) argues that whilst 'most museums how recognise that they cannot ignore questions of disabled access' their response is varied. Some do a little, others a lot. Some museum responses are planned, others are ad-hoc. The overarching outcome however is that visually impaired visitors have an ambivalent status, they are both 'invited in and kept outside'. One of example of this is the British Museums production of a tactile book that contained a series of raised diagrams of the Parthenon Freize. Hetherington (2002) describes this as a deferral- an attempt to maintain distance (and difference) between object and visitor through the use of a prosthesis. Hetherington (2003) also uses a sociological lens to attempt to understand the relationship between object (museum artefact) and subject (visually impaired person) and the implication this has for knowledge, knowing and curation. Arguing that the value of touch and object handling is not very well understood, Chaterjee (2008) takes a broader view than Hetherington and includes historical and scientific perspectives in their inspection (although they do not focus solely on visual impairment). The value of touch for blind or visually impaired museum visitors is contested however. For example, [redacted]) presents two case studies of how two blind art students engaged with museum artworks. They used these two case studies to distinguish between active exclusion (deliberate oppression) and passive exclusion which derived from inaccurate information about the needs of blind people or naïve beliefs about blindness. One example of passive exclusion provided by [redacted]) is that of providing touch exhibitions for visually impaired people, which he argues is influenced more by cultural tradition and political-social guidance than the needs of visually impaired people. Another example of passive exclusion is the assumption that blind or visually impaired people do not need to be physically close to works of art in order to experience them ([redacted]).

Many researchers have argued that technology has a role to play in facilitating access to museum knowledge, resources and collections (e.g. Constantinou et al. 2016; Weisen, 2012; Chan and Siu, 2013; Angakananon et al. 2015). Weisen (2012: p 163) argues that: "Technology has the power to enhance the museum experience to widen access for disabled people". The most commonly designed technology for this group of users is applications for mobile devices (Jain, 2014;

Anagnostakis et al. 2016; Ruiz et al 2011). For example, Constantinou et al. 2016 developed an Android platform to create a self-paced guided tour of the museum for deaf or hearing impaired people. Each exhibit had a QR code which when scanned, would display information on the mobile phone that would be translated into a sign language video. Other technologies include websites (Leporini and Norscia 2008). 3D scanning and printing (Gual et al. 2011; Stanco et al. 2017); smart canes (Fanucci et al. 2011); social media (McMillen and Alter, 2017) and robots and haptic interfaces (Park et al. 2015).

Approaches to inclusion and participation for museum visitors with intellectual impairments

Arguments regarding the potential value of museums to people with intellectual impairments as spaces to support the pursuit of educational, social and leisure opportunities were being made as early as the 1990's (Hooper-Greeenhill, 1994). There has also been a growing appreciation that they should be involved in assessing heritage site provision (Hooper-Greenhill *et al.* 2002; Rayner 1998; Economou 1999; Ruiz 2004; Rix 2005). However, compared to people with sensory impairments, much less research has focused on the inclusion of people with intellectual impairments in museum learning experiences. For example, Sova (2010) claimed that for both Slovenian and European museum communities there is a common misconception that disabled people are a homogeneous group or comprise only those with mobility difficulties or sensory impairment. Iversen and Leong (2012:471) noted that an art museum in Denmark had initially failed to consider improving accessibility for visitors with intellectual disabilities "due to the perception that the general public feels that such visitors are not compatible to the institution of art". In addition, there is much less exploration of the role of technologies for museum visitors with intellectual impairments; what little there is, is restricted to focusing on iPads or smartphones (e.g. Haworth and Williams, 2012; Iversen and Leong, 2012). Haworth and Williams (2012) describe how they used iPads or smartphones to enable people with intellectual impairments to follow trails in a museum by scanning QR codes.

Shephard (2009) argued that while the MLA framework provides a starting point for developing an inclusive learning environment, without expert knowledge (e.g. of intellectual impairments) museum staff may struggle to implement successful methods. Based on a similar argument to Shephard, [redacted]) hypothesised that museums and heritage sites might feel enabled if they had a broad range of descriptors to call upon when considering intellectual access issues. Drawing on the identified characteristics of Down Syndrome, [redacted] created some good practice guidelines and assessed these against an audio tour written for people with intellectual impairments. Rix argued that these guidelines demonstrate the need for heritage educators to ask many more questions than current official guidance (e.g. MLA, 2004) suggest.

There are however four notable projects that have attempted to use participatory research methods to examine museum access and inclusion issues for people with intellectual impairments. [redacted] describe and examine the processes involved in a participatory research project involving 25 people with intellectual impairments visiting and evaluating 13 cultural and heritage sites. The participatory approach to the research involved: enabling all participants to participate in decision-making about what the project would do and how the sites would be evaluated; using symbols, photographs and drawings to make information accessible and facilitate communication and involving participants in the design of data collection tools. One outcome of this research was a set of recommendations for how cultural and heritage sites should involve people with intellectual impairments. Graham (2013) describes a participatory project they undertook called 'Museums for

Us' in which they explored the Smithsonian Museums in Washington, DC. They met with individuals, families and groups and used photographs to help them pick which of the museums they wanted to visit. They then went to the museums together and during the visit, took photographs, recorded their thoughts and engaged in discussion. Hollinworth et al. (2014; 2016) describe how they used a participatory approach to the design of multisensory objects that could be handled and explored by people with intellectual impairments when visiting museums. This work was based on the argument that the materials made accessible to those with intellectual impairments as substitutes for the originals are usually chosen by the curators rather than determined by the user group. In experiential exploratory workshops researchers and people with intellectual impairments worked together to identify aspects of a cultural heritage site that would be interest to visitors with intellectual impairments and researching multisensory ways to present and relate the context (i.e. sensory objects). Methods employed to include people with intellectual impairments were drawn from multi-media advocacy approaches and included using cameras, videos, sounds and texts to capture thoughts and reflections. Brownlee-Chapman et al. (2018) describe how they used an inclusive research process to develop a Living Archive of Learning Disability History. One innovative aspect of their approach to inclusive research was to employ a person with learning disabilities as one of the project research assistants.

Approaches to evaluating projects that focus on facilitating inclusion and access to museum

Studies that report the development of technologies that aim to increase access to museums for visitors with intellectual impairments or sensory impairments tend to offer quantitative evaluative evidence. But typically what is being evaluated is the usability of the technology (Leporina and Norscia, 2008; Park et al. 2015). Usability is commonly evaluated by asking participants to undertake a number of pre-determined tasks and/or completing questionnaires or interviews offering person opinions regarding helpfulness of the technology. Sometimes this user-testing takes place within a museum environment (e.g. Reichinger et al. 2011) sometimes they do not (e.g. Leporini and Norscia, 2008). There tends to be an assumption however, that success is constituted by a reduction in the need for human support (See for example Gual et al. 2011). Such criteria are potentially problematic however, given that not all disabled people understand independence as the elimination of human support. Finally, technology design studies rarely describe their evaluation methods in detail and can offer little evidence to support conclusions for future developments. For example, McMillen and Alter (2017: p119) claim that participants in their study "repeatedly confirmed that social media enabled them to connect and communicate…When executed correctly social media allows visitors to have a voice". It is not clear however what constitutes correct execution of social media within a museum context and who has defined 'correctness'; the participants or the researchers.

Studies that report on the implementation of inclusive museum projects tend to offer more qualitative evidence (compared to studies that report the development of technologies) in the form of reflections on the perceived success of the processes and products of the projects. These reflections are offered as observational narratives and the authors own interpretation of events (see for example, Morse, Macpherson and Robinson, 2013; Graham, 2013 and Lynch 2014). Some evaluations are multi-faceted in that they combine personal reflections with other sources. For example, in reflecting on the processes and products of the 'Myths about Race' project Lynch and Alberti (2010) combine their own observations with meeting minutes, transcriptions from recorded public events and audio-visual recordings from public events to evaluate the extent to which 'radical trust' (shared authority) was created. Graham (2013) combined a reflective interpretation of the

success of a workshop with museum staff designed to share the aims and processes of facilitating access to the museum for people with intellectual disabilities with an 'ethnographic poetics' of the 'withness' of the museum visits. In addition to being multi-faceted and reflective some evaluations are also in collaborative or participatory in nature. For example, Lynch (2011) conducted a collaborative evaluation project intended to evaluate engagement and participation in twelve museums and galleries in the UK. In addition to observational field notes and reviews of policy documents, evaluations involved the co-development of questionnaires; one-to-one interviews with participants; story-walls, where following each exercise participants added their evaluative comments onto a story wall which were then captured in a project blog and a Dragon's Den type exercise where participants acted as critical friends to museums following presentations on their ways of working.

To conclude this overview of museum approaches to inclusion and participation, it is clear that the ARCHES project is not operating in a vacuum. There is already a relatively strong tradition of collaborating with publics (e.g. to co-produce exhibitions), although less so with regards to evaluating the success of these endeavours. There is a reasonably well-established thread of work focused on facilitating access for museum visitors who are blind or visually impaired, but less so with regards to access for visitors with intellectual impairments. Some museum related research has also investigated the role of technologies for facilitating access- but again less so for visitors with intellectual impairments. Furthermore, the evaluation of the success of the use of technologies does not appear to be integrated with or reflect the wider approaches to evaluation within participatory museum projects which tend to be more reflective and qualitative in nature. Whilst there is a body of work that the ARCHES project can draw on in developing its approach to participatory evaluation, there are methodological 'gaps' that it will need to fill. For example, ensuring that the approach to evaluation enables participation of both participants with visual impairments and participants with intellectual impairments; being flexible enough to enable evaluation of all three key components of the project: museums, technology and access needs and finally being systematic enough that it could be used by other partners in the ARCHES project outside of London in broader evaluation initiatives.

THE ARCHES EVALUATION METHODOLOGY

In this section we will outline the methodological approach we used to work with a small group of people who had been participating in the London component of the ARCHES project during the first year. In particular we will describe and explain the participatory methods we used to both elicit and analyse data that would enable us to judge the extent to which the ARCHES project had been successful in achieving its aim of being participatory.

The research underpinning both components conformed to the ethical standards of the British Educational Research Association and ethical approval for the project was obtained from the primary authors' institution. Key issues addressed within our ethical protocol included recruiting adults over the age of 18, the production of accessible information and consent forms and continual revisiting of consent during the project. 18 participants took part in the evaluation project with most sessions averaging about 9 participants. Participants included four helpers, two researchers, three people with visual impairment, six people with hearing impairment, one person with intellectual impairments and three people with a mixture of access preferences.

Participatory methods for eliciting evaluation data in the ARCHES project

Our participatory methods for eliciting evaluation data focused on both processes and activities.

Processes

A key aspect of participatory research is enabling participants to take control over the way the project is designed and implemented. Participants may need support however to do this and it may be counter-productive to present participants with the equivalent of a blank piece of paper and expect them to fill it without some scaffolding or structure (Seale et al. 2015). In the ARCHES project one typical way this was achieved was for the researchers and museum staff to put together an initial plan for activities, introduce the plan to the participants and then adjust it in response to their feedback. Therefore for this evaluation project, the authors devised an initial plan for eight ninety-minute sessions (See Table 1) which began with introducing the project to the whole of the group and then once participants had volunteered, supporting them to shape the project by choosing: the focus of the evaluation; what data sets and artefacts to analyse and what data collection methods to use. Participants were also supported to present their findings to the wider London group.

< Table 1 about here>

Sometimes when participants made decisions, some professional judgement was required of the researchers regarding how best to facilitate the decisions made. For example, in session three the participants decided that in addition to collecting new evaluation data they also wanted to look at existing data that had been collected. Prior to session four the project leader reviewed the project archives for existing data that could be shared with the participants. As there were over a thousand 'data items' contained within sixty folders on the institutional 'drive', they felt that it would be too overwhelming for the participants to trawl through it themselves. They therefore used a random number generator to generate 20 random numbers between one and 60 and then used these twenty numbers to look into the relevant folder and pick out whatever media files there were- avoiding audio clips of over 30 minutes, and not including blurred or duplicate photographs. The result was that 107 data items were shared with the group in session four: 5 audio files (of participant discussions or interviews), 5 word documents (of notes taken during participants discussions), 6 videos (of ARCHES participants engaging with museum tours and exhibits), 8 pdfs (of notes taken during participants discussions or) and 88 photographs (of ARCHES participants engaging with museum tours and exhibits). Visually impaired participants were supported to access the textual documents using screen readers or support workers.

In other sessions, participants were supported to make decisions about what activities they wanted to undertake through modelling or demonstrations. For example, in session five one researcher introduced and demonstrated two methods that they suggested could potentially be used by participants to collect 'new' evaluation data: body-mapping and iPoems (See next section for further explanation). At the end of the session one participant asked if they could make a tapestry in future sessions to represent the group's experiences of being involved in ARCHES. This question was presented to the whole group, who all agreed. Sessions six to nine were then led by participants as they planned and created a group tapestry. During these tapestry-making sessions, activities evolved as some participants became further inspired and started to create their own separate 'art installations' (See Figure 1).

< Figure 1 about here> Figure 1: An example of an 'art-installation, created drawn by an ARCHES participant to express their experience of being involved in the project

Activities

In the absence of concrete examples of participatory activities for eliciting evaluation data within the museum related literature that we reviewed, we turned to more general literature on participatory research for creative examples to draw upon. Two interesting methods that we found were body-mapping and I-poems. Body mapping originated as an art-therapy method aimed at recording stories and memories. At the heart of the process, participants are supported to draw life-size body images of themselves. Gastaldo et al (2012:p5) describe how they have applied body-mapping as a research method to enable undocumented workers in Canada to tell their stories. They define body-mapping as a method to:

> visually represent aspects of people's lives, their bodies and the world they live in. Body mapping is a way of telling stories, much like totems that contain symbols with different meanings, but whose significance can only be understood in relation to the creator's overall story and experience.

There were two main reasons why we thought that body-mapping might be an appropriate method to introduce to the ARCHES London exploratory group. Firstly, it was an artistic method and many participants had already expressed an interest in art through their intense engagement with the art exhibits within the two host museums. Secondly, the method had been used in another project involving participants with intellectual impairments. In a seminar series focusing on participatory data analysis a group of researchers with intellectual impairments briefly described how they had used body-mapping as a way of analysing experiences [3]. In introducing the method to the group the project leader took along photos of different body-maps that they had found on the Internet. Body-mapping is a very visual method, so in order to cater for those with visual impairments, the lead author converted one of the body-map photographs into a tactile body-map through the use of clay to mark the outline of the body. Furthermore, drawing inspiration from the totem metaphor used by Gastaldo et al. (2012) the lead author also introduced the group to the idea of creating a clay-sculpture along the lines of a totem pole as an alternative to drawing a body-map.

I-poems were originally devised by Gilligan and colleagues as a specific method for analysing interviews in longitudinal research projects. The process involved four main sequential readings of an interview transcript in order to ascertain "who is telling the story"; how do participants represent or speak about themselves; how the participant talks about relationships with others and how to specific political and cultural contexts shape their sense of self (Gilligan et al. 2003). Edwards and Weller (2012: 205) describe how they have focused on just the second stage in order to develop a case study of a young person's sense of self over time. They describe the process of creating an I-poem as reading through an interview transcript and highlighting each use of the first person 'I' (and associated verbs or text). They then cut and paste these highlighted phrases ' in the exact sequence that they occur originally in the interview, and placing them in separate lines, like the lines of a poem'.

There were two main reasons why we thought that i-poems might be an appropriate method to introduce to the ARCHES London exploratory group. Firstly because the method had been in another

project involving participants with intellectual impairments. Nind and Vinha (2016:p17) describe their 'playful' use of I-poems in a research project that was investigating perceptions of co-researchers (with and without intellectual impairments) regarding what constituted 'quality' inclusive research with people with intellectual impairments. They explain that the use of I-poems was attractive to them because the ' the concepts of plot and voice were interesting in the light of the repeated references the participant-researchers in their study made to their identities, learning journeys, experiences and hopes'. In a similar vein, we also felt that for the ARCHES project there would be value in exploring participants' journeys over the first twelve months of the project. Therefore in session five, the lead author introduced the idea of I-poems to the group and shared with them an example from the Edwards and Weller (2012) paper.

Having seen, felt and heard example body-maps, sculptures and I-poems participants decided that they would like to try all three. Therefore within session five participants began by creating their own body-map or sculpture (See Figures 2 and 3).

< Figure 2, about here> An example of a body-map drawn by an ARCHES participant to express their experience of being involved in the project

< Figure 3, about here> An example of a body-map drawn by an ARCHES participant to express their experience of being involved in the project

During session five, one participant shared that they were not very good at drawing and so were not 'pleased' with their body-map. Another participant used their body-map to share how they were frustrated at not having a voice within the project. For these two participants, the lead author scanned the data archives for any examples of the voices of these two participants voices being captured (in audio, video or transcript) and applied the process described by Edward and Weller to create two I-poems. In subsequent sessions, the lead author shared these with the participants and discussed with them the extent to which the I-poems reflected their experience of being involved in the project (See Figure 4).

< Figure 4 about here>

Participatory methods for analysing evaluation evidence in the ARCHES project

One aspect of the participatory process that is often neglected is participation in data analysis (Nind, 2011). One major reason for such neglect is the assumption that disabled people, particularly those with intellectual impairments lack the capacity to engage in what are perceived to be the complex processes of analysis. Not all researchers agree however. For example, Seale et al. (2015) give an overview of the range of methods that presenters at an ESRC funded seminar on participatory data analysis with people with intellectual impairments shared as examples of making data analysis accessible. They noted that some projects used standard coding and thematic analyses techniques paying attention to the provision of appropriate support and structure to enable this to happen, whilst other projects used less familiar methods such as 'research circles' or comic strip conversations. Even with the employment of such methods, one tension that can remain is the extent to which the non-disabled researcher is perceived to have the right to conduct some aspect of the analysis independently of the participants with intellectual impairments (Seale et al. 2015). For some participatory researchers this contravenes the key principles of participatory research, for

others there is concern that non-disabled researchers are becoming invisible, and not being recognised as also occupying a valid role as participant in the research. Such invisibility denies the skills that non-disabled researchers bring to a project and could be argued to be argued to be symptomatic of a move to hide the role of the skilled researchers in order to deny difference and promote an image of competency and normality for the people with intellectual impairments (Walmsley and Johnson, 2003).

We hold the position that there is a role for both participants with impairments and researchers to undertake their own analyses within a participatory project such as ARCHES. There were therefore, two levels of analysis: an emergent or in-situ analysis by the participants during the sessions that addressed their two chosen research questions and an overarching meta-analysis by the researchers at the end of the project that addressed academic requirements of the funder to provide data for three distinct purposes: i) evaluation of technologies leading to recommendations to technology partners ii) Evaluation of activities and sites leading to recommendations to museums iii) Evaluation of process and method leading to recommendations in EU reports. It is our argument that both of these processes were participatory. We would define the first as 'participation in the while' and the second as 'participation of the while'. Participation is an experience that happens in the moment, while you are doing something. It is socially created from the collective resources, understandings and interactions as well as a personal and physical nature of that experience. We therefore recognised that the emergent analysis happened *while* participating in sessions, whereas the overarching academic analysis was a retrospective '*verification of the while'*.

Emergent in-situ analysis by the participants: evaluation 'in the while'

In session two, participants were supported to identify a research question that they wanted to address during the evaluation project. After much discussion, they eventually agreed on the following questions:

1. What is the impact on ARCHES participants, when their access needs are met/not met?
2. What implications does this have for future sessions

Participants engaged in in-situ analysis of their impact of their experiences of the ARCHES sessions in three particular sessions. In session four, 107 existing data items from the project archives were made available to participants for analysis using tablets. In pairs, participants were asked to consider the following questions:

1. What do you find interesting about the video, photo, document or audio recording?
2. What do you think we can learn from the video, photo, document or audio recording about the experience of taking part in ARCHES?

The discussions that each pair engaged in constituted their in-situ analysis. (See for example, Figure 5).

<Figure 5 about here>

During the creation of body-maps or sculptures participants in session five, participants were encouraged to ask each other questions to begin a process of analysis. (See Figure 6). For example:

"Tell me why you drew yourself like that?" The lead author also spoke to people individually about the meaning of their art work. In the tenth and final session all London ARCHES participants (current and past) were invited by the evaluation project participants to an exhibition of the tapestry, the body-maps, sculptures and other art installations. The creators took it in turns to explain their work and the group discussed their responses to the work. The responses during these in-situ analysis sessions were recorded either in note form or using a digital recorder and formed part of the corpus for the overarching meta-analysis by the researchers.

< Figure 6 about here>

Overarching meta-analysis by the researchers: verification 'of the while'

Given that our literature review did not identify any existing evaluation framework in the fields of inclusive museums, inclusive technologies or inclusive research in museums we looked wider afield and identified a framework that had been used in health contexts. The International Collaboration for Participatory Health Research (ICPHR) has proposed a framework for evaluating the extent to which stakeholders are included in health research. ICPHR identified six concepts of validity in inclusive health research:

1. Participatory validity- the extent to which all stakeholders are able to take an active part in the research process to the full extent possible;
2. Intersubjective validity: The extent to which research is viewed as being credible and meaningful by the stakeholders from a variety of perspectives;
3. Contextual validity: The extent to which the research relates to the local situation;
4. Catalytic validity: the extent to which the research is useful in terms of presenting new possibilities for social action;
5. Ethical validity the extent to which the research outcomes and the changes exerted on people are sound and just;
6. Empathic validity: the extent to which the research has increased empathy among participants.

We decided to try and apply this framework to our evaluation of the ARCHES project and developed a set of questions or issues that we felt reflected the six validities and were applicable to the context of inclusive museum education and technology (See Table 2). We used this framework whilst coding data within NVivo (See Table 3). The data held within NVivo had been collected during the ten sessions and included field-notes taken by the authors who either led or participated in the sessions (n=9): notes taken to enable synchronous subtitling during the session which were later used as session transcripts(n=10); photographs taken by participants of activities taking place within sessions and the artefacts created (n=45); email communications from participants giving personal feedback on the sessions (n=2) and transcriptions of participants discussing with each other or the authors the activities they were taking part in and the meaning they drew from them (n=19).

<Table 2 & 3 about here>

All the authors coded the data looking for examples of both presence and absence of each validity (Table 3). For example, with respect to Participatory Validity we were looking for occasions where participants had been supported or inhibited in taking a full and active part in the research process.

We were looking therefore for the presence or absence of the following kinds of behaviours or actions (See also Table 2):

- Who takes part in each activity and who does not?
- How are decisions taken within the group?
- Were any decisions or activities blocked within the group, if so why? If not, what reasons were given?
- Do participants understand that the project is meant to be participatory? Are there any signs or occasions where participants appear confused and unsure about the participatory nature of the project or seem to positively embrace or reject the participatory nature of the project?
- How are participants being supported to understand and enact participatory practices?

In Table 4 (column 1, row 1) we provide an example of a participant being supported to engage in a participatory practice – in this instance, joining a group who were working on making a tapestry together. In Table 4 (column 2, row 1) we also provide an example of a participant reporting that they did not always understand what was going on in the ARCHES project ('gone over my head') and suggest that this lack of understanding might have influenced their ability to fully participate or engage in the project.

DISCUSSION

In this paper we have described and justified a methodological approach that we have adopted to evaluate how participatory the London arm of the ARCHES project has been. In this section we will critique the strengths and weaknesses of the approach

How successful were the chosen methods for eliciting evaluation data in revealing useful information about participation?

We have already shared with you some evidence to suggest that the process for eliciting evaluation data was successfully participatory. Participants were able to change what they did in sessions such as take the project in the direction of creating art installations and a Tapestry. This did not happen however until about half way through the project. Early on in the sessions it was clear that some participants struggled to understand the aims of the evaluation project and what was being asked of them. This, combined with the fact that there was another parallel group taking place involving the creation of a 'Sensory Back Pack', meant that in the early sessions, people with intellectual impairments chose not to take part.

> Participants responded in various ways but two that stay in my mind are: 1) Not really understanding what 'data analysis' is and needing a lot of explanation 2) Misunderstanding when the evaluation would start- and beginning to offer evaluative comments there and then rather than discussing the overarching question of what the project was about and whether they would like to take part […] [Session 1 field notes]

Comments from one participant with intellectual impairment may explain why this might have happened, suggesting that the introduction of another 'project' on top of the others they were already engaged in had been overwhelming:

> I am finding the feedback on the new project difficult to get my head around. We have done so many small projects and I am getting stressed out and annoyed because we are moving onto something new and there is too much to take in every week. And the projects don't seem to get finished. [Session 1 transcript]

Later on when the sessions moved from talking to doing [i.e. creating the body-map and the Tapestry] some people with intellectual impairments then asked if they could participate. The difficulties the participants had in understanding the proposed processes did not prevent the project from making progress, but it did perhaps slow things down:

> Once again, the participants found it difficult to distinguish between agreeing what we want to evaluate and why (planning) and sharing their experiences (data generation). However we did manage to agree a research question. [Session 2 field notes].

The activities that we employed to elicit evaluation data (e.g. body-maps and iPoems) were successful in that they enabled both positive and negative views to be expressed (See Table 4). They also enabled a picture to emerge of how the experience of participating in ARCHES had changed over the 12 months. For some the change was from 'good' to 'better' (See for example Figure 3. where the figure on the far left represents being shy and unsure of the project and the figure on the far right represents being a little more confident and willing to open up and share). For some, the change was from 'good to bad' (See Figure 4). For others, the ARCHES journey had both ups and downs (See for example Figure 2 and the reference to a hill or mountain):

> The frayed rope showed that we have had some losses, some have left the project but we have also gained as well. The material is smooth and nice to touch and has a gold braided wave pattern on it to show the peaks and troughs. [Session 9 transcript]

Whilst the creative activities have enabled a multi-dimensional picture of the experience of participating in ARCHES to emerge, their use did not suit the needs and preferences for all participants. We noted that some did not appear to enjoy the artistic nature of the activities, whilst for others, there were issues of accessibility:

> L did not want to explain her body-map. I am not sure if this is because she did not feel well, or if she did not enjoy the experience. During the body-map sessions she seemed to enjoy it less than others. [Session 9 field-notes]

> I think it's very important to make the poem more accessible to people with severe and multiple learning disabilities. It speaks to me. But other people here it may not speak to them [iPoem discussion, participant with multiple access needs]

The interpretative nature of the activities (i.e. asking participants to assign meaning to photographs, Body-maps, tapestry and art installations) also presented a communication challenge. For example, some participants, as part of the wider ARCHES project, had become so used to critiquing the accessibility of museum artefacts that when we presented them with photographs of participants engaging in ARCHES activities to analyse in terms of what they told us about the participatory experience of the participants in the photographs, they critiqued the accessibility of the photograph instead. This reflects a confusion the participants occasionally had between participating in the broader ARCHES project and participating in the more specific evaluative aspect of the ARCHES project. On occasions it was also difficult to interpret conversations around artefacts such as the

body-maps and Tapestry. For example, in these field notes, one researcher assumed that a participant was struggling to assign meaning to their tapestry:

> H continued with their tapestry. When I asked them to tell me about the meaning- they seemed to struggle. I have a feeling they made things up to please me. [Session 7 field-notes]

However, on reading this extract, another researcher assumed that it was the researcher who was struggling:

> It could be just about communication challenges or it could be that his meaning is not 'good enough' for you.... this could be about the researcher 'struggling'?

Whatever the truth, it is clear that the use of creative activities such as Body-Maps requires creative communication strategies in order to ensure that the intended meaning is fully understood.

How successful were the chosen methods for analysing evaluation data in revealing useful information about participation?

Emergent in-situ analysis by the participants: evaluation 'in the while'

The participants had two questions that they wanted to address during their in-situ analysis:

1. What is the impact on ARCHES participants when their access needs are met/not met?
2. What implications does this have for future sessions

While engaging in-situ analysis many, although not all participants, were able to discuss what the 'data' told them about whether access needs were being met in the ARCHES project and there were occasions where this had an immediate impact on future ARCHES sessions. For example the conversation represented in Figure 5 is between two participants who are analysing photographs that have been taken during the ARCHES project in the previous twelve months. They have identified how engaged the participants in the photograph are and then go on to talk about how people's needs are being met. At the end of this particular session, the wider group began a broader debate about whether participants understood one another's needs. One participant suggested that that a future ARCHES session be dedicated to what he called 'training, where people could talk about their access needs. There was general agreement to this. This resulted in a session being run a few months later in which a museum educator with expertise in explaining museum artefacts to blind or visually impaired was invited to bring along some tactile objects and model to us how best to describe or explain them to blind or visually impaired people. Field-notes indicate that this session was really well received:

> She chose some really good tactile objects and structured the session to get us all thinking. S and S [participants with intellectual impairments] were particularly engaged, answering questions, asking questions and volunteering to try out the objects. I was interested that N [blind participant] was not offended by the activities that required us all to put on blind-folds to simulate blindness. He did however add to the advice given by the leader by offering more nuanced explanations of the experiences of blindness [field-notes session 8].

Overarching meta-analysis by the researchers: verification 'of the while'

In terms of our overarching evaluation of participation, with the exception of ethical validity, applying the ICPHR framework to our evaluation data enabled us to identify instances during the project where both the absence and presence of each validity was exemplified (See Table 4). We suggest that this provides a detailed and nuanced picture of the participatory success of the ARCHES project. The exploration of the validities enabled some powerful issues to emerge. For example, in relation to contextual validity we noticed that the technology aspect of the ARCHES project was rarely mentioned by participants. This is concerning given that developing new technology is a central mission of the ARCHES project. In relation to empathic validity, we noticed that whilst the participants with sensory or intellectual impairments expressed lots of empathy for other people with impairments, they rarely expressed empathy for the non-disabled participants in the project: the technology partners, museum staff and researchers. This suggests that despite attempts by the ACRHES partners to be participatory and therefore inclusive, there was still a 'them and us' mentality in the project that needed to be addressed:

> She said something which was interesting, but also worrying in terms of how inclusive we academics and museum staff think we are being: "at the end of the day, you are the boss and we are the participants" [session 5 field-notes]

The potential division highlighted in this example mirrors the findings of other inclusive museum projects that have not involved people with sensory and intellectual impairments. For example, Lynch (2014: p71) concluded that museums will find it hard to relinquish control (i.e. the role of boss) because: "We somehow continue to face the other with fear and work hard to exercise control, because engagement will always serve as Bauman puts it, to 'unmask the bitter artifice of division'". It also serves to support the position of Facer and Enright (2016) who in their evaluation of the 'Connected Communities Programme' (which aimed to promote collaborative research between universities and communities) concluded that explicit steps needed to be taken to mitigate the risk of enhancing inequalities though collaborative research.

CONCLUSION

In this paper we have described, justified and critiqued a participatory approach that we have developed in order to evaluate the success of a participatory research project that was exploring ways of making museum learning experiences more inclusive for adults who have a diverse range of access preferences. Because we were researching in a unique space- at the intersection of inclusive museum education, inclusive technologies and participatory research we have sought to develop an original evaluation approach that is informed by methods and approaches derived from other fields. Our experience of using creative methods for eliciting evaluation data suggest that useful information about participation can be revealed. However, a great deal of flexibility is needed in order to facilitate changes in direction that participants might want to take (for example the Tapestry and art installations). Such changes can provide valuable nuanced insights of both the strengths and weaknesses of a participatory project. Greater consideration is needed in order to facilitate earlier and continual engagement of some participation (for example, helping people with intellectual impairments to understand the concept of analysis or evaluation or making methods such as iPoems more accessible). Our experience of analysing the evaluation data that our methods

elicited has revealed two important insights. Firstly, verifying the while, demonstrates the messiness of participatory research. It reveals tensions around support, power and voice, which are evident through the outcomes of the project (such as the body maps and the tapestries). Secondly, verifying the while will reveal things which cannot necessarily be resolved. Simply undertaking a retrospective activity is not enough, there must also be ongoing emergent analysis where people can make real time changes to practice to ensure participation is enriched. This ongoing process however, may benefit from using the ICPHR six validities as a frame for reflection.

NOTES

[1] We are using the term 'museum' to encompass art galleries, museums, and cultural heritage sites.

[2] At the outset of the project a broad label was proposed, "People who experience differences and difficulties associated with perception, memory, cognition and communication". As the project progressed it became clear that not all the participants wished to be defined by this or any other label however. There was a collective agreement therefore to subsequently refer to participants as having access preferences. Our use of the deficit labels within this paper exemplifies the manner in which our commitment to voice is compromised when we move into an academic arena

[3] https://www.slideshare.net/Jane65/brief-notes-on-our-different-approaches-to-analysis-example-1

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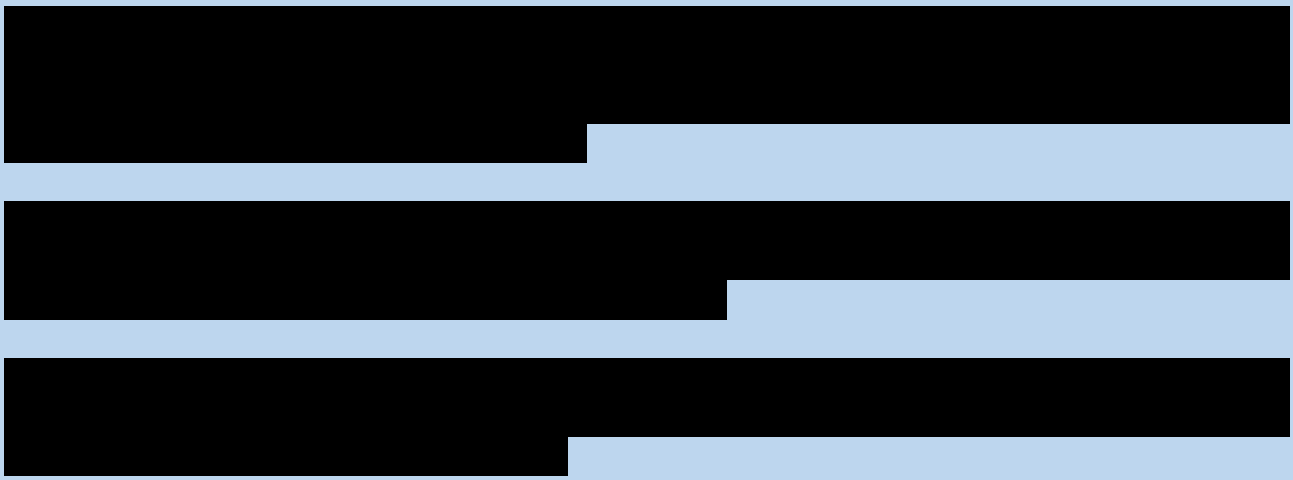

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Session Number	Original Session Plan	Amended Participant Driven Plan
Session 1	Introduce the Analysis project and ask interested participants to volunteer What do we want to analyse in ARCHES and why? How this analysis project will work	Introduction to the Evaluation project and asking interested participants to volunteer
Session 2	Participants choose which strand of the analysis framework they want to focus on (Technology, Museums, Research) and what questions they want to address	Participants choose the focus of their evaluation
Session 3	Group reviews- what data exists already that could be analysed And/or what new data might need to be produced	What data have we already got to answer our research questions? How could we analyse data we have already got? What new data could we collect to answer these questions? How could we analyse any new data we collect? How can we share what we have found?
Session 4	Gathering together any existing data and brainstorming the interesting bits about each piece of data AND/OR Collecting new data- e.g. conducting interviews	A random sample of 107 data items were shared with the group. In pairs they looked through these and discussed what interested or seemed relevant to them
Session 5	Demonstration and Practising of Data Elicitation and Analysis Techniques Agreeing who is going to do what and how	Participants created a body-map or a sculpture
Session 6	Analysing the data and sharing initial findings within the small group for checking and feedback	Planning what the tapestry will look like, choosing fabrics OR planning own art installation
Session 7	Group agrees the main findings and prepares a summary/presentation	Continuation- moving from planning to creation
Session 8	Group presents findings to rest of ARCHES group for feedback	Continuation- Finishing off
Session 9		Continuation- Finishing off
Session 10		Exhibition

Table 1: ARCHES Evaluation Project: Original Session Plan compared to Amended Participant Driven Plan

Validity	Applied to ARCHES	Example issues
Participatory Validity	Is ARCHES allowing participants to play a full and active part in the research process?	Who takes part in each activity and who does not? How are decisions taken within the group? Were any decisions or activities blocked within the group, if so why? If not, what reasons were given? Do participants understand that the project is meant to be participatory? Are there any signs or occasions where participants appear confused and unsure about the participatory nature of the project or seem to positively embrace or reject the participatory nature of the project? How are participants being supported to understand and enact participatory practices?
Intersubjective Validity	Is ARCHES credible and meaningful to participants	Do the participants recognise and value what the project is trying to achieve
Contextual Validity	Is ARCHES relevant to the local situation? (i.e. sensitive to the needs, interests and motivations of individuals in the group)	Is the ARCHES project relevant to participants' access needs and interests (e.g. technology, museums, access) Are participants' motivations for joining the project being met or have they been?
Catalytic Validity	Is ARCHES creating opportunities for change or action?	Have things changed because of participants' involvement in the project? If so –what? Is the change (actual or potential) within the project or beyond the project?
Ethical Validity	IS ARCHES sound and just in what it is trying to achieve and the way it is trying to achieve it?	Has the project been managed in a fair way? Have participants been fairly treated? Have all members of the group been treated in an equal way?
Empathetic Validity	Is ARCHES increasing empathy among participants	Have participants come to relate to the access preferences of other participants Have participants come to understand the perspectives of others involved across the research? Have participants felt part of a community/team/group

Table 2: Application of the ICHPR six validities to the ARCHES project

Codes	Sources	References
PP- Positive example of Participatory validity	14	31
PN- Absence of Participatory Validity	15	31
IP- Positive example of Intersubjective validity	7	12
IN- Absence of Intersubjective validity	6	10
NP Positive example of Contextual validity	7	8
NN- Absence of Contextual validity	14	31
CP- Positive example of Catalytic validity	15	24
CN- Absence of Contextual validity	7	11
JP -Positive example of Ethical validity	0	0
JN- Absence of Ethical validity	6	7
EP- Positive example of Empathetic validity	21	41
EN- Absence of Empathetic validity	8	11

Table 3: NVivo Coding framework

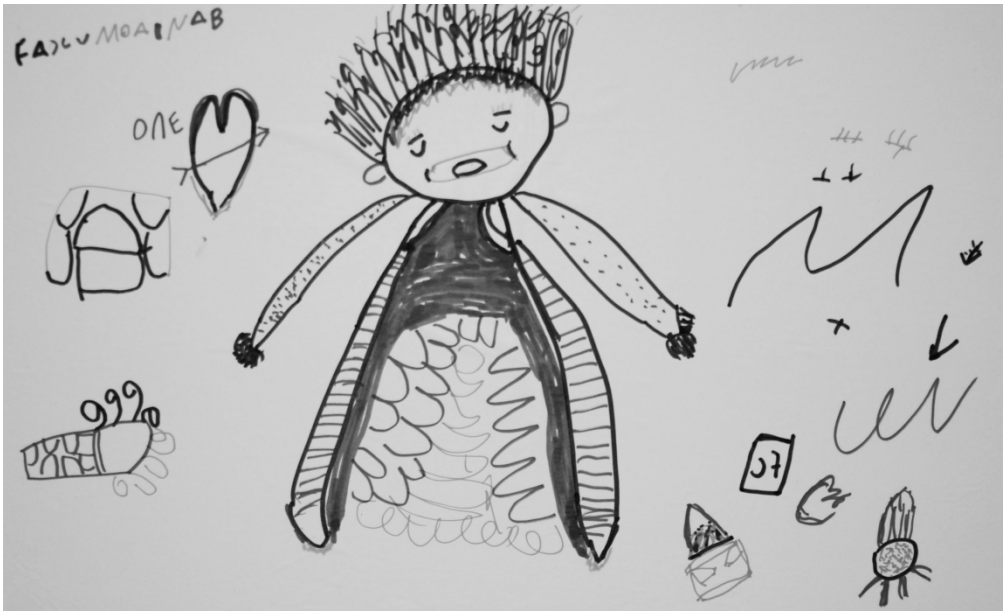
Validity	Presence	Absence
Participatory validity	D asked to join the tapestry group because she said she was intrigued by what we had been doing. I showed her all the body-maps in the portfolio to explain the background to the project and then explained what the tapestry group were doing. D quickly decided what she wanted to do and with the help of E began work in earnest on what became a separate 'installation'. F was recruited to help at some point in order to make a box for D out of some card. This was a nice example of co-operation between the different 'sub-groups'. [Session 7 field-notes	Sometimes I have a smile on my face, but it has gone over my head. [Body map discussion, deaf participant]
Intersubjective validity	Arches to me is like a heart, your love for everybody here and you are all in one heart. [Art installation discussion, participant with a learning disability]	She explained that she was upset because promises were not being kept. She said that she had been promised that the Bell poem project would be finished- for D, being finished meant involving her in adding in the BSL I think. This led the group to discuss what they viewed as a wider issue of mini projects not being finished, suggesting to them a lack of organisation on our part and a waste of time on their part [Session 1 field-notes]
Contextual validity	I like it because we get a chance to visit one of the galleries- there was lots of stuff there- there was a painting of someone- of course I can't see it, but I like the history- that person died at an early age. I loved the Mystery Shopper stuff- but with that I get involved with so many other museums. [art installation discussion, blind participant]	The question marks are to do with sometimes I'm uncertain about what we are going to be doing. There's been some tours for instance where I haven't received any information beforehand. I understand that sometimes that's not possible but it just makes me very anxious- because obviously I am the conduit for access for people like T. So that's just representing those emotions [body map discussion, support worker]
Catalytic Validity	How I see ARCHES.. I've learnt so much. It's people- all sorts of people and each person has different access needs. Being in ARCHES, it's not so much about the Art, although the art is lovely, it's not so much about the art- it's about growing- it's about realising other people are there and they have their access needs… When I learn that, I can think and be aware of what that person's needs it. It's learning all those things, and that is what is important to me. [Body map discussion, participant with multiple access needs]	The apples represent knowledge and sometimes these are dropped. [Session 9 field-notes, reporting conversation with a deaf participant about their Body Map]
Ethical Validity		I did say that some people don't represent their own disability- they've sort of like… our disability is better than theirs… but to me that's not true, it shouldn't be like that… it should be that you come for your own disability and see how you can make that

		accessible. [Art installation, deaf participant]
Empathic Validity	How I see ARCHES.. I've learnt so much. It's people- all sorts of people and each person has different access needs. Being in ARCHES, it's not so much about the Art, although the art is lovely, it's not so much about the art- it's about growing- it's about realising other people are there and they have their access needs… When I learn that, I can think and be aware of what that person's needs it. It's learning all those things, and that is what is important to me. [Body Map discussion, participant with multiple access needs]	And then- like today- it's very, very noisy, so I drew big ears to represent that I can't hear properly. The crosses over the eyes is for- I didn't understand blind people.[…] The wavy lines is because I was angry that sometimes people think that their disability is more [important] than maybe hearing because it is invisible. Therefore they want to put their thing across and won't listen to anybody else. [Body map discussion, deaf participant]

Table 4: Illustrative examples of the presence and absence of each of the six ICPHR validities

An example of an 'art-installation, created drawn by an ARCHES participant to express their experience of being involved in the project

646x815mm (72 x 72 DPI)



An example of a body-map drawn by an ARCHES participant to express their experience of being involved in the project

262x159mm (300 x 300 DPI)

An example of a body-map drawn by an ARCHES participant to express their experience of being involved in the project

215x194mm (300 x 300 DPI)

I think it is lovely
I would definitely like to have some colour
I like it, it is really beautiful.

I wanted to read everything on the signs and boards, but because of the pace of the tour there was no time.

I want to go to many places, but I'm held back because I can't speak very clearly and the staff are very ignorant.

I was really happy because the entrance was very accessible
I was able to walk independently with the walker
I felt very independent; it was amazing.
I was very happy about that
I wanted to buy a drink, but because my speech is not very good, they asked me to write it down, which was great!
I wish there were more places like that.

I got the feeling that when we were being filmed some got more time than others.

I wonder what the point is, some people here need to learn more about people's needs
I don't think people understand the effort it takes for me to come to ARCHES.

Figure 4: An example of a participant i-poem

P: Oh that's me

J: it looks like you are really engaging in talk and so that's a positive picture

P: We're very very involved- everybody is involved and everyone's access needs are taken on board and it is a place where everyone can. Although sometimes I think D struggles, what I like about ARCHES is that it is very accepting of everybody- so everybody's needs are taken on board [discussion of photographs session 4, one participant with hearing impairment, one participant with multiple access needs.

Figure 5: Extract from a discussion that two participants had, prompted by reviewing project photographs

1. **Trace an outline of your body** on one of the large pieces of paper in a posture that represents how you feel about the ARCHES project (e.g. sleeping, jumping, waving hands, curled up in a ball, dancing).

Pick a colour for the body outline that best represents how you feel

When you and your partner(s) have finished- ask one another questions about what you have drawn.

- Tell me why you drew yourself like that…
- How did you feel about ARCHES at the beginning, how do you feel about ARCHES now.

2. **Draw one or more symbols or pictures** that represent your experiences of participating in the ARCHES project (e.g. an object you have seen in the museum, a place you have visited with ARCHES, an activity that you have taken part in). Think about where you would like to put this symbol on your body- for example, on your head, in your chest, on your ears?

When you and your partner(s) have finished- ask one another questions about what the meaning of the symbols and where you have placed them

- What does this symbol mean, why have you placed it there?

3. **You might like to create a slogan**, a statement or a saying that describes your current thinking about how inclusive the ARCHES project has been so far.

Think about where to place your personal slogan on the sheet.

Figure 6: Analysis guidance for participants on the body-mapping exercise